AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A method for amplifying at least a first diversity-encoded signal and second diversity-encoded signal, each of which represents information of a first signal to be transmitted using transmit diversity, and for amplifying a second signal to be transmitted without using transmit diversity, comprising the steps of:

sharing the amplification of the at least first and second diversity-encoded signals between at least two amplifiers; ~~and~~

sharing the amplification of the second signal between the at least two amplifiers~~.~~; and

forming each of at least first and second composite signals as a function of the second signal,

wherein the second sharing step includes:

amplifying the first composite signal; and

amplifying the second composite signal.

2. (Original) The method of claim 1, wherein the first and second sharing steps are carried out concurrently.

3. (Previously Presented) The method of claim 1, further comprising the steps of:

forming each of at least first and second composite signals as a function of the at least first and second diversity-encoded signals,

wherein the first sharing step includes:

amplifying the first composite signal in a first amplifier; and

amplifying the second composite signal in a second amplifier.

4. (Currently Amended) The method of claim 3, ~~further comprising the steps of:~~

~~forming each of the at least first and second composite signals as a function of the second signal;~~

wherein ~~the second sharing step includes:~~

amplifying the first composite signal is in a first amplifier; and

amplifying the second composite signal is in a second amplifier.

5. (Previously Presented) The method of claim 3, wherein the step of forming the at least first and second composite signals is performed in a digital domain.

6. (Previously Presented) The method of claim 5, further comprising the steps of:

pre-distorting the first composite signal; and

pre-distorting the second composite signal,

wherein the steps of amplifying the first and second composite signals further include amplifying the pre-distorted first composite signal and the pre-distorted second composite signal.

7. (Canceled)

8. (Previously Presented) A method for processing at least a first diversity-encoded signal and a second diversity-encoded signal, each of which represents information

of a first signal to be transmitted using transmit diversity, and a second signal to be transmitted without using transmit diversity, comprising the steps of:

forming at least a first composite signal and a second composite signal as a function of the at least first and second diversity-encoded signals;

amplifying the first composite signal to produce an amplified first composite signal;

amplifying the second composite signal to produce an amplified second composite signal; and

forming amplified first and second diversity-encoded signals as functions of at least the amplified first and amplified second composite signals, in which

the amplification of the at least first and second diversity-encoded signals is shared between at least two amplifiers.

9. (Previously Presented) The method of claim 8, further comprising the steps of:

forming a phase-shifted first diversity-encoded signal and a phase-shifted second diversity-encoded signal, wherein

the amplified first diversity-encoded signal further includes an amplified phase-shifted first diversity-encoded signal; and

the amplified second diversity-encoded signal further includes an amplified phase-shifted second diversity-encoded signal.

10. (Previously Presented) The method of claim 8, further comprising the steps of:

forming a phase-shifted first diversity-encoded signal and a phase-shifted second diversity-encoded signal, wherein

the first composite signal is a function of a combination of the first diversity-encoded signal with the phase-shifted version of the second diversity-encoded signal , and

the second composite signal is a function of a combination of the second diversity-encoded signal with the phase-shifted version of the first diversity-encoded signal.

11. (Previously Presented) The method of claim 8, further comprising the steps of:

forming a phase-shifted first diversity-encoded signal and a phase-shifted second diversity-encoded signal, wherein

the amplified first diversity-encoded signal is a function of a combination of the amplified first composite signal with the phase-shifted version of the amplified second composite signal, and

the amplified second diversity-encoded signal is a function of a combination of the amplified second composite signal with the phase-shifted version of the amplified first composite signal.

12. (Previously Presented) The method of claim 8, wherein

the first composite signal is a function of a sum of the first diversity-encoded signal and the second diversity-encoded signal; and

the second composite signal is a function of a difference between the first diversity-encoded signal and the second diversity-encoded signal.

13. (Previously Presented) The method of claim 8, wherein

the amplified first diversity-encoded signal is a function of a sum of the amplified first composite signal and the amplified second composite signal; and

the amplified second diversity-encoded signal is a function of a difference between the amplified first composite signal and the amplified second composite signal.

14. (Original) The method of claim 8, further comprising the steps of:

transmitting the amplified first diversity-encoded signal over a first antenna; and

transmitting the amplified second diversity-encoded signal over a second antenna.

15. (Previously Presented) The method of claim 8, further comprising the steps of: forming the at least first and second composite signals as a function of a second signal; and

forming an amplified second signal as a function of at least the amplified first and second composite signals.

16. (Previously Presented) The method of claim 8, wherein the step of forming the at least first and second composite signals is performed in a digital domain.

17. (Previously Presented) The method of claim 16, further comprising the steps of:

pre-distorting the first composite signal; and

pre-distorting the second composite signal,

wherein the steps of amplifying the first and second composite signals further include amplifying the pre-distorted first and second composite signals.

18. (Previously Presented) A transmitter, comprising:

a first device for forming at least a first composite signal and a second composite signal as functions of at least first and second diversity-encoded signals, the first and second diversity-encoded signals representing information of a first signal to be transmitted using transmit diversity, and a second signal to be transmitted without using transmit diversity,

a first amplifier having an input coupled to the first device, the first amplifier amplifying the first composite signal to produce an amplified first composite signal;

a second amplifier having an input coupled to the first device, the second amplifier amplifying the second composite signal to produce an amplified second composite signal; and

a second device having a first input coupled to an output of the first amplifier and a second input coupled to an output of the second amplifier, the second device forms amplified first and second diversity-encoded signals as functions of at least the amplified first and second composite signals, in which the amplification of the at least first and second diversity-encoded signals is shared between the first and second amplifiers.

19. (Previously Presented) The transmitter of claim 18, wherein the first device includes:

channel processing circuitry; and

at least one radio for forming the first and second composite signals.

20. (Previously Presented) The transmitter of claim 18, wherein

the first device includes:

channel processing circuitry;

at least one radio; and

a first hybrid combiner having an input coupled to an output of the radio, a first output coupled to the first amplifier, and a second output coupled to the second amplifier, the first hybrid combiner forming the first and second composite signals; and

the second device includes a second hybrid combiner having a first input coupled to the first amplifier and a second input coupled to the second amplifier.

21. (Previously Presented) The transmitter of claim 20, wherein the first and second hybrid combiners are embodied as 90° hybrid combiners.

22. (Previously Presented) The transmitter of claim 18, wherein

the first device further includes a digital predistorter having an output coupled to the first and second amplifiers, the digital predistorter pre-distorts the first composite signal and the second composite signal,

the first amplifier amplifies the pre-distorted first composite signal to produce the amplified first composite signal, and

the second amplifier amplifies the pre-distorted second composite signal to produce the amplified second composite signal.

23. (Previously Presented) The transmitter of claim 18, further comprising the steps of:

forming a phase-shifted first diversity-encoded signal and a phase-shifted second diversity-encoded signal, wherein

the amplified first diversity-encoded signal further includes an amplified phase-shifted first diversity-encoded signal, and

the amplified second diversity-encoded signal further includes an amplified phase-shifted second diversity-encoded signal.

24. (Previously Presented) An apparatus, comprising:

at least one or more antenna; and

a transmitter coupled to at least one of the at least one or more antennas, the transmitter comprising:

a first device for forming at least a first composite signal and a second composite signal as functions of at least first and second diversity-encoded signals, the first and second diversity-encoded signals representing information of a first signal to be transmitted using transmit diversity, and a second signal to be transmitted without using transmit diversity;

a first amplifier having an input coupled to the first device, the first amplifier amplifying the first composite signal to produce an amplified first composite signal;

a second amplifier having an input coupled to the first device, the second amplifier amplifying the second composite signal to produce an amplified second composite signal; and

a second device having a first input coupled to an output of the first amplifier and having a second input coupled to an output of the second amplifier, the second device forms amplified first and second diversity-encoded signals as functions of at least the amplified first and second composite signals, in which the amplification of the at least first and second diversity-encoded signals is shared between the first and second amplifiers.

25. (Previously Presented) The apparatus of claim 24, wherein the first device includes:

channel processing circuitry; and

at least one radio for forming the first and second composite signals.

26. (Previously Presented) The apparatus of claim 24, wherein

the first device includes:

channel processing circuitry;

at least one radio; and

a first hybrid combiner having an input coupled to an output the radio, a first output coupled to the first amplifier, and a second output coupled to the second amplifier, the first hybrid combiner forming the first and second composite signals, wherein

the second device includes a second hybrid combiner having a first input coupled to the first amplifier, and a second input coupled to the second amplifier.

27. (Previously Presented) The apparatus of claim 26, wherein the first and second hybrid combiners are embodied as 90° hybrid combiners.

28. (Previously Presented) The apparatus of claim 24, wherein

the first device further includes a digital predistorter having an output coupled to the first and second amplifiers, the digital predistorter pre-distorts the first composite signal and the second composite signal;

the first amplifier amplifies the pre-distorted first composite signal to produce the amplified first composite signal; and

the second amplifier amplifies the pre-distorted second composite signal to produce the amplified second composite signal.

29. (Previously Presented) The apparatus of claim 24, wherein

the amplified first diversity-encoded signal further includes an amplified phase-shifted first diversity-encoded signal, and

the amplified second diversity-encoded signal further includes an amplified phase-shifted second diversity-encoded signal.

30. (Original) The apparatus of claim 24, wherein the apparatus includes at least two antennas and the transmitter is coupled to at least two of the antennas.

31. (Original) The apparatus of claim 24, further comprising a receiver coupled to at least one of the antennas.

32. (Currently Amended) A method for amplifying at least a first diversity-encoded signal and a second diversity-encoded signal, each representing information of a

first signal to be transmitted using transmit diversity, and for amplifying a second signal to be transmitted without using transmit diversity, comprising:

sharing the amplification of the at least first and second diversity-encoded signals between at least two amplifiers, concurrently; ~~and~~

sharing the amplification of the second signal between the at least two amplifiers~~.~~; and

forming each of at least first and second composite signals as a function of the second signal,

wherein the second sharing step includes:

amplifying the first composite signal; and

amplifying the second composite signal.

33. (Previously Presented) A method for processing at least a first diversity-encoded signal and a second diversity-encoded signal, each representing information of a first signal to be transmitted using transmit diversity, and a second signal to be transmitted without using transmit diversity, comprising:

forming a phase-shifted first diversity-encoded signal and a phase-shifted second diversity-encoded signal;

forming at least a first composite signal based on a combination of the first diversity-encoded signal with the phase-shifted version of the second diversity-encoded signal;

forming a second composite signal based on a combination of the second diversity-encoded signal with the phase-shifted version of the first diversity-encoded signal;

amplifying the first composite signal to produce an amplified first composite signal;

amplifying the second composite signal to produce an amplified second composite signal; and

forming amplified first and second diversity-encoded signals based on the amplified first and second composite signals, in which the amplification of the at least first and second diversity-encoded signals is shared between at least two amplifiers.

34. (Previously Presented) A transmitter, comprising:

at least one radio;

a first hybrid combiner coupled to the radio, the first hybrid combiner forming at least first and second composite signals based on at least first and second diversity-encoded signals, the first and second diversity-encoded signals representing information of a first signal to be transmitted using transmit diversity, and a second signal to be transmitted without using transmit diversity;

a first amplifier coupled to the first hybrid combiner, the first amplifier amplifying the first composite signal to produce an amplified first composite signal;

a second amplifier coupled to the first hybrid combiner, the second amplifier amplifying the second composite signal to produce an amplified second composite signal; and

a second hybrid combiner coupled to the first amplifier and to the second amplifier for forming amplified first and second diversity-encoded signals based on the amplified first and second composite signals, in which the amplification of the at least first and second diversity-encoded signals is shared between the first and second amplifiers.

35. (Previously Presented) An apparatus, comprising:

at least one or more antennas; and

a transmitter coupled to at least one of the at least one or more antennas, the transmitter comprising:

at least one radio;

a first hybrid combiner coupled to the radio, the first hybrid combiner forming at least first and second composite signals based on at least first and second diversity-encoded signals, the first and second diversity-encoded signals representing information of a first signal to be transmitted using transmit diversity, and a second signal to be transmitted without using transmit diversity;

a first amplifier coupled to the first hybrid combiner, the first amplifier amplifying the first composite signal to produce an amplified first composite signal;

a second amplifier coupled to the first hybrid combiner, the second amplifier amplifying the second composite signal to produce an amplified second composite signal; and

a second hybrid combiner coupled to the first amplifier and to the second amplifier for forming amplified first and second diversity-encoded signals based on the amplified first and second composite signals, in which the amplification of the at least first and second diversity-encoded signals is shared between the first and second amplifiers.